

Microbiology and Immunology Microbiology

Course outline for Fall 2020



Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the [Digital Student Experience](#) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: <https://www.uwo.ca/health/>.

1. Technical Requirements:



Stable internet connection



Laptop or computer



Working microphone



Working webcam

2. Course Overview and Important Dates:



Delivery Mode	Dates	Time
Online	M/W/F	1:30-2:20pm

*Details about design and delivery of the course are listed below in Section 4

Classes Start	Reading Week	Classes End	Study day(s)	Exam Period
September 9	November 2 - 8	December 9	December 10	December 11 - 22

* November 12, 2020: Last day to drop a first-term half course or a first-term full course without penalty

3. Contact Information

*Course Co-Coordinators



Instructors	Email	Office
Dr. Carole Creuzenet* <i>Coordinator-Bacteriology section</i>	ccreuzen@uwo.ca	DSB3031
Dr. Stephen Barr* <i>Coordinator-Virology section</i>	stephen.barr@uwo.ca	DSB3007
Dr. Jeremy Burton <i>Instructor-Bacteriology section</i>	jburto29@uwo.ca	LHRI
Teaching Assistants		
Teaching Assistants	Email	
Cassandra Edgar	cedgar5@uwo.ca	
Mackenzie Dodge	mdodge@uwo.ca	

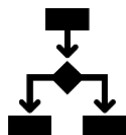
4. Course Description and Design

Introduction to molecular and structural bacteriology, bacterial genetics, bacteria-host interactions in context of health and disease, and to applications of bacteria for biotechnology/health. Introduction to the fundamentals of molecular virology and virus–host interactions.

Prerequisites: Biochemistry 2280A, Biology 2581B, Microbiology and Immunology 2500A

Recommended: Biochemistry 3381A

Mode	Dates	Time	Frequency
Virtual synchronous	M/W/F	1 hour	3 x / week
Virtual asynchronous	M/W/F	1 hour	3 x / week



- Asynchronous pre-work must be completed 1 day prior to synchronous sessions as defined in this syllabus
- Attendance at synchronous sessions is required as defined in this syllabus
- Missed work should be completed as defined in this syllabus
- A recording will be provided for synchronous sessions
- Closed captioning will be provided on audio or video recordings

All course material will be posted to OWL: <http://owl.uwo.ca>. Any changes will be indicated on the OWL site and discussed with the class.

If students need assistance, they can seek support on the [OWL Help page](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#).

5. Learning Outcomes



The primary purpose of this course is to familiarize students with molecular and structural bacteriology and virology, bacteria/virus-host interactions in the context of health and disease, applications of bacteria and viruses in biotechnology and health and basic bacterial and virus genetics supporting such applications and discoveries in Microbiology.

Students are expected to view all recorded lectures and recorded student presentations, read the supplemental material when applicable, complete all assignments (written reports and oral presentations), and develop a "working knowledge" of microbiology.

6. Course Content and Schedule

Date	Instructor	Topic
September Wedn. 9	TAs	Student oral presentation and assignments lecture
September Wedn. 9	TAs & Dr. Creuzenet	Relevance of microbes to health, industry and the environment.
September Frid.11	Dr. Creuzenet	Continue lecture: Relevance of microbes to health, industry and the environment.
September Mond. 14	Dr. Creuzenet	Bacterial cell structures and function
September Wedn. 16	Dr. Creuzenet	Bacterial growth and division
September Frid. 18	Dr Creuzenet	Bacterial genetics 1
September Mond. 21	Dr Creuzenet	Bacterial genetics 2
September Wedn. 23	TAs & Dr Creuzenet	Student presentations 1 (two groups)
September Frid. 25	Dr. Creuzenet	Bacterial genetics 3
September Mond. 28	Dr. Creuzenet	Waterborne and Foodborne bacterial diseases 1
September Wedn. 30	TAs & Dr Creuzenet	Student presentations 2 (three groups)
October Frid. 2	Dr. Creuzenet	Waterborne and Foodborne bacterial diseases 2
October Mond. 5	Dr Burton	Bacterial metabolism and metabolic diversity
October Wedn. 7	TAs & Dr Creuzenet	Student presentations 3 (three groups)
October Frid. 9	Dr Burton	Phylogeny, taxonomy
October Mond. 12		No class. Thanksgiving
October Wedn. 14	Dr Burton	Microbiome, transcriptome, metabolome
October Frid. 16	TAs & Dr Creuzenet	Student presentations 4 (three groups)
October Mond. 19	TAs & Dr. Creuzenet & Dr. Burton	Student presentations 5 (three groups)
October Wedn. 21	TAs & Dr. Creuzenet	On-line exam 1 on lectures by Dr Creuzenet & Burton.
October Frid. 23	TAs & Dr Burton	Student presentations 6 (three groups)
October Mond. 26	Dr Barr	Viral Diversity
October Wedn. 28	Dr Barr	Viroids, Plant and Insect Viruses



October	Frid. 30	TAs & Dr Barr	Student presentations 7 (two groups)
November	Mond. 2		No class Reading week
November	Wedn. 4		No class Reading week
November	Frid. 6		No class Reading week
November	Mond. 9	Dr Barr	Bacterial Viruses
November	Wedn. 11	Dr Barr	Positive Single Strand Viruses
November	Frid. 13	TAs & Dr Barr	Student presentations 8 (three groups)
November	Mond. 16	Dr Barr	Negative Single Strand Viruses
November	Wedn. 18	Dr Barr	Double-stranded RNA Viruses
November	Frid. 20	TAs & Dr Barr	Student presentations 9 (three groups)
November	Mond. 23	Dr Barr	Small DNA Viruses
November	Wedn. 25	Dr Barr	Large DNA Viruses
November	Frid. 27	TAs & Dr Barr	Student presentations 10 (three groups)
November	Mond. 30	Dr Barr	Retroviruses
December	Wedn. 2	Dr Barr	Evolutionary Arms Race: Virus vs Host
December	Frid. 4	TAs & Dr Barr	Student presentations 11 (three groups)
December	Mon 7	TAs & Dr Barr	Student presentations 12 (if needed)
December	TBA	TAs & Dr Barr	FINAL Exam on Dr Barr's lectures and student presentation questions

7. Online Participation and Engagement



- Students are expected to participate and engage with content as much as possible
- Students can participate during synchronous sessions
- Students can also participate by interacting in the forums with their TAs and instructors

8. Evaluation

Below is the evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Date	Format	Weighting	% of Final Mark
Oral Presentation and Assignments	Scheduled at the start of term	Oral Presentation (online via zoom)	10%	30%
		Written Assignment #1 (2-page)	10%	
		Written Assignment #2 (1/2 page)	8%	
		Attendance at assigned oral presentation (online via zoom)	2%	
Midterm: Bacteriology Section	Oct 21, 2020 (70-minutes)	Dr. Creuzenet's 9 lectures	25%	35%
		Dr. Burton's 3 lectures	10%	
Final Exam: Virology Section & Student Presentation Topics	TBA (70-minutes)	Dr. Barr's 10 lectures	25%	35%
		All student presentations	10%	

- All assignments are due at 11:55 pm EST unless otherwise specified
- Virtual proctoring will be used
- Written assignments will be submitted to Turnitin (statement in policies below)
- Students will have unlimited submissions to Turnitin
- Rubrics will be used to evaluate assessments and will be posted with the instructions
- After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days



Student Presentations And Written Assignments:

Oral Zoom Presentation (10% of final course mark): One component of the course involves students working together in groups to present a pre-defined topic (see schedule above). Presentations will be given live online via a Zoom meeting in the presence of instructors, TAs and selected student groups. All presenting groups must join the Zoom meeting 10 minutes ahead of time to arrange technical details. Each student will be graded individually.

Written Assignment #1 (10% of final course mark): Each group will submit one 2-page written report (single-spaced, Times New Roman font, font size of 12, 1 inch margins) on their group topic 24 hours prior to their group's Oral Zoom Presentation. Each group will be graded together, not individually.

Attendance and participation at assigned Oral Zoom Presentation (2% of final course mark): Each group will be preassigned to attend one of the Oral Zoom Presentation sessions and are expected to ask questions. The final mark out of 2% will be based on attendance, participation in the question/answer period, AND on the quality of the question asked. Each person will also be required to write a ½ page report on one of the pre-assigned Oral Zoom Presentations (see "Written Assignment #2" below).

Written Assignment #2 (8% of final course mark): Due no later than one week after the viewed presentation. Each person will be assigned to write a ½-page report (single-spaced, Times New Roman font, font size of 12, 1 inch margins) on one of the group Oral Zoom Presentations. This will be preassigned. Emphasis will be on what **was not covered in the oral presentation, but could have been**. For example, what possibilities the topic or new knowledge opens up, what is next in this field, what is the significance, etc. DO NOT paraphrase the presentation or 2-page report from presenters.

Test/Exam Format:

Exams will be held online in real-time via OWL. Questions will be given in linear fashion **WITHOUT** the ability to re-visit previous questions. The question format for all exams will be multiple choice, multiple-multiple choice, true/false and/or fill-in-the blank. Questions will be based on lecture material provided for the appropriate sections. Midterm 1 (Oct. 21, time to be announced (TBA)) covers the entire bacteriology sections (35 questions with a 70 minute time limit). The Final Exam covers Dr. Barr's lecture material **AND** the material covered in all of the recorded presentations and 2-page 'Written Assignment #1' reports uploaded in OWL by each student group. Questions based on the Written Assignments #1 will be prepared and released to the students ahead of time to facilitate their study. The final exam will be held during the final exam period (date and time TBA) (35 questions with a 70 minute time limit).

Each student is responsible for watching the recorded videos that will be uploaded in OWL and for reading all 2-page 'Written Assignment #1' reports submitted and uploaded by each group into OWL. **All** 'Written Assignment #1' reports (from the start of the semester until the end) is testable on the final exam. Students are expected to also view the recorded student presentations that will be uploaded in OWL.

It is the student's responsibility to ensure that they have a stable internet connection, that they are logged into OWL prior to the start time of the exam, and that all technical, software and hardware computer issues are resolved prior to the exam time. Students will need to complete a 'mini-exam' about scholarly integrity posted on the M&I 3100 OWL site. This will also serve as a good practice for exam technical issues, though this one does not have the time limits that the real exams will have. Be aware that online student activity during the exam time period will be monitored for patterns that may indicate cheating.

Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Information about late or missed evaluations:

- Late assessments *without* self-reported absences will be subject to a 25%/day late penalty
- Late assessments *with* self-reported absences should be submitted within 24 hours of the end of the 48-hour period.
- An assessment cannot be submitted after it has been returned to the class; [an alternate assessment will be assigned]
- A make-up test will be offered
- If a make-up assessment is missed, the student will receive an INC and complete the task the next time the course is offered

Late Written Assignments #1 or #2:

Student written assignments that are late will lose 25% of their corresponding 'Written Assignment #1' or 'Written Assignment #2' mark every 24 hours that it is late. Groups that are 5 or more days late will receive a zero for their corresponding Written Assignment mark.

Attendance at Oral Zoom Presentations:

Attendance and participation at preassigned online Oral Zoom Presentation sessions will account for 2% of your final mark in the course. Students who have received special permission to miss their pre-assigned session are responsible to forward the information to the TAs, WITH A COPY to the course coordinator. Students will be required to attend another Oral Zoom Presentation session assigned by the TA and complete the corresponding ½ page assignment.

Missed Class Presentation

If a student in a group is absent on their group's scheduled presentation date, the group will still present their topic **including the information that would have been covered by the absent student**. It is thus paramount that the whole group prepares the presentation together. If the absent student has accommodation, he/she will present the entire topic alone, **including the information that would have been covered by the other group members**, on a different day. If the absent student does not provide an accommodation note, that student will receive 0% for their 'Oral Presentation' mark. If a student is non-responsive to emails in preparation for their group's presentation, the TAs should be notified ASAP by other group members. If unresolved promptly, the rest of the group will proceed on their own and that student will receive a 0% for their 'Oral Presentation' mark.

Additional Information on Evaluations

TAs will provide information about exam viewing through the OWL site. Two dates for exam viewing will be announced. Students wishing to view their exam must email the TAs which of the 2 dates they chose. No exam viewing will take place after the second viewing date.

A detailed and comprehensive set of regulations concerning the scheduling of tests, assignments, etc. is available at:

http://www.uwo.ca/univsec/academic_policies/examinations.html

9. Communication:



- Students should check the OWL site every 24 – 48 hours
- A weekly update will be provided on the OWL announcements
- Emails will be monitored daily; students will receive a response in 24 – 48 hours
- This course will use the OWL forum for discussions and ALL lecture/presentation content-related questions. Students are advised to post in the proper instructor/TA folder with a clear header clearly identifying the topic and to scan the list of previously asked questions as the same question will not be answered twice.
- This course uses the discussion forum for questions so that everyone can access answers to questions and also contribute to answering the questions
- The discussion forums will be monitored daily by instructors or teaching assistants

10. Office Hours:



- Office hours will be held remotely using Zoom upon request
- Students will be able to sign up for an appointment using _____
- Students will be able to drop into session on _____ at _____
- Group office hours will be held, recorded, and posted for everyone to view

11. Resources



- All resources will be posted in OWL
- Required textbook
- Required study guide
- Additional resources can be found using textbooks and the internet

12. Professionalism & Privacy:

Western students are expected to follow the [Student Code of Conduct](#). Additionally, the following expectations and professional conduct apply to this course:



- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Recordings are not permitted (audio or video) without explicit permission
- Permitted recordings are not to be distributed
- Students will be expected to take an academic integrity pledge before some assessments
- All recorded sessions will remain within the course site or unlisted if streamed

13. How to Be Successful in this Class:

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful.



1. Invest in a planner or application to keep track of your courses. Populate all your deadlines at the start of the term and schedule time at the start of each week to get organized and manage your time.
2. Make it a daily habit to log onto OWL to ensure you have seen everything posted to help you succeed in this class.
3. Follow weekly checklists created on OWL or create your own to help you stay on track.
4. Take notes as you go through the lesson material. Treat this course as you would a face-to-face course. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively than just reading or watching the videos.
5. Connect with others. Try forming an online study group and try meeting on a weekly basis for study and peer support.
6. Do not be afraid to ask questions. If you are struggling with a topic, check the online discussion boards or contact your instructor(s) and or teaching assistant(s).
7. Review lecture material weekly.
8. Reward yourself for successes. It seems easier to motivate ourselves knowing that there is something waiting for us at the end of the task.

14. Western Academic Policies and Statements

Absence from Course Commitments

[Policy on Academic Consideration for Student Absences](#)

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a **self-reported absence** or via the **Academic Counselling** unit. Students have two self-reports to use throughout the academic year; absence from course commitments including tests, quizzes, presentations, labs, and assignments that are worth 30% or less can be self-reported. Self-reported absences cover a student for 48 hours (yesterday + today or today + tomorrow). Your instructor will receive notification of your consideration; however, you should contact your instructor immediately regarding your absence. Students are expected to submit missed work within 24 hours of the end of the 48-hour period. Please review details of the [university's policy on academic consideration for student absences](#).

If you have used both their self-reported absences or will miss more than 48 hours of course requirements, a Student Medical Certificate (SMC) should be signed by a licensed medical or mental health practitioner and you should contact academic counselling. Academic Counselling will be operating virtually this year and can be contacted at scibmsac@uwo.ca.

Accommodation for Religious Holidays

The policy on Accommodation for Religious Holidays can be viewed [here](#).

Special Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. To provide an opportunity for students to recover from the circumstances resulting in a Special Examination, the University has implemented Special Examinations dates. These dates as well as other important information about examinations and academic standing can be found [here](#).

Academic Offenses

"Scholastic offences are taken seriously, and students are directed [here](#) to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Accessible Education (AE) at 661-2111 x 82147 for any specific question regarding an accommodation or review [The policy on Accommodation for Students with Disabilities](#).

Correspondence Statement

The centrally administered **e-mail account** provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner. You can read about the privacy and security of the UWO email accounts [here](#).

Turnitin and other similarity review software

All assignments will be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. Students will be able to view their results before the final submission. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between Western University and [Turnitin.com](https://www.turnitin.com).

15. BMSUE Academic Policies and Statements

Cell Phone and Electronic Device Policy (for in-person tests and exams)

The Schulich School of Medicine & Dentistry is committed to ensuring that testing and evaluation are undertaken fairly across all our departments and programs. For all tests and exams, it is the policy of the School that any electronic devices, i.e., cell phones, tablets, cameras, or iPod are strictly prohibited. These devices **MUST** be left either at home or with the student's bag/jacket at the front of the room and **MUST NOT** be at the test/exam desk or in the individual's pocket. Any student found with one of these prohibited devices will receive a grade of zero on the test or exam. Non-programmable calculators are only allowed when indicated by the instructor. The program is not responsible for stolen/lost or broken devices.

Copyright and Audio/Video Recording Statement

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. You must always ask permission to record another individual and you should never share or distribute recordings.

Rounding of Marks Statement

Across the Basic Medical Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks **WILL NOT** be bumped to the next grade or GPA, e.g. a 79 will **NOT** be bumped up to an 80, an 84 **WILL NOT** be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark "bumping" will be denied.

16. Support Services

The following links provide information about support services at Western University.

[Academic Counselling \(Science and Basic Medical Sciences\)](#)

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)